

Claims

- Sub B3
1. A generating device configured to generate signals for a graphical display in which a focus can be navigated between spaced, functional display regions such that they are individually selected when the focus is moved thereto, with a plurality of spaced nodes configured so that the focus makes a step movement from one node to another thereof in response to user actuation, the nodes being arranged in a mesh at the intersections of a first set of spaced lines extending a first predetermined direction and a second set of spaced lines extending in a predetermined second transverse direction, the functional regions being irregularly disposed in the display and at least one of the nodes being disposed at each of the regions respectively.
  2. A device according to claim 1 including a user operable navigation control device to provide said user actuation to move the focus from one of said nodes to a next another one thereof in the mesh, the navigation device including a first control to move the focus in said first predetermined direction and second control to move the focus in the second predetermined direction.
  3. A device according to either claim 1, wherein at least one of the nodes is disposed outside of the regions.
  4. A display device according to claim 1, wherein the first set of spaced lines are non-equally spaced.
  5. A device according to claim 1, wherein the functional display region is associated with a region displayed on the graphical display.
  6. A device according to claim 1 having a display device coupled thereto so as to provide the graphical display.
  7. A device according to claim 1 included in a multimedia network terminal.
  8. A device according to claim 1 included in a set top box for a television.
- Sub A2
- Sub B5

9. A device according to claim 1 comprising a mobile station.
10. A device according to claim 1 comprising a personal computer.
11. A device according to claim 1 further comprising additional nodes arranged on another mesh at the intersections of a third set of spaced lines extending a third  
5 predetermined direction and a fourth set of spaced lines extending in a predetermined fourth transverse direction, the focus being navigable between said meshes.
12. A device according to claim 11, wherein said other mesh overlies or underlies said mesh.
- 10 13. A device according to claim 11, wherein the third predetermined direction is the same as the first predetermined direction.
14. A device according to claim 11, wherein the fourth predetermined direction is the same as the second predetermined direction.
- 15 15. A device according to claim 1 further comprising a node disposed on a handle of a scroll bar so as to allow scrolling of a page and permit selection of functional display regions not presently displayed.
- Sub A3 16. A method of navigating a focus between spaced, functional display regions in  
20 a device according to claim 2 comprising inputting into the user operable navigation device a movement command corresponding to movement along the first predetermined direction and stepping the focus from a first spaced node to a second spaced node displaced from the first node along the first predetermined direction.
17. A method of navigating a focus from said mesh to said other mesh in a device according to claim 11 comprising navigating the focus to a node on said mesh  
25 adjacent to said other mesh and inputting into the user operable navigation device a

Sub A3 } movement command corresponding to movement off said mesh in the direction of said other mesh.

18. A method of navigating a focus from said mesh and onto said node in a device according to claim 15 comprising navigating the focus to a node on said mesh adjacent to node disposed on the handle of a scroll bar and inputting into the user operable navigation device a movement command corresponding to movement off said mesh and onto said node disposed on the handle of the scroll bar.

Sub B7 } 10 19. A method of configuring a mesh, the method comprising determining minimum and maximum co-ordinate values along a predetermined direction for a first functional display region, determining minimum and maximum co-ordinate values along a predetermined direction for a second functional display region, obtaining an intermediate co-ordinate value in dependence on said values and providing a mesh line defined by said median co-ordinate value.

15 20. A method according to claim 19 wherein obtaining said intermediate value comprises determining a mean value of the maximum and minimum co-ordinate values for the first region.

20 21. A method according to claim 19 wherein obtaining said intermediate value comprises testing whether the maximum co-ordinate value of the first region is greater than the minimum co-ordinate value of the second region and determining a mean value of the maximum co-ordinate value for the first region and the minimum co-ordinate value of the second region.

25 22. A method according to claim 19 wherein obtaining said intermediate value comprises testing whether the maximum co-ordinate value of the first region is greater than the minimum co-ordinate value of the second region, testing whether the maximum co-ordinate value for the first region is greater than the maximum co-ordinate value for the second region and determining a mean value of the maximum and minimum co-ordinate values for the second region.

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23. A method, in a display generating device configured to provide a graphical display in which a focus can be navigated between spaced, functional display regions such that they are individually selected when the focus is moved thereto, for operating said device, the method comprising configuring a plurality of spaced  
5 nodes so that the focus makes a step movement from one node to another thereof in response to user actuation, said configuring comprising arranging the nodes in a mesh at the intersections of a first set of spaced lines extending a first predetermined direction and a second set of spaced lines extending in a  
predetermined second transverse direction, the functional regions being irregularly  
10 disposed in the display and at least one of the nodes being disposed at each of the regions respectively.

24. A computer program product comprising a computer readable medium having thereon: a computer program configured to provide when loaded on a computer, signals to generate a graphical display in which a focus can be navigated between  
15 spaced, functional display regions such that they are individually selected when the focus is moved thereto, to make said computer execute procedure to configure a plurality of spaced nodes so that the focus makes a step movement from one node to another thereof in response to user actuation, the nodes being arranged in a mesh at the intersections of a first set of spaced lines extending a first predetermined  
20 direction and a second set of spaced lines extending in a predetermined second transverse direction, the functional regions being irregularly disposed in the display and at least one of the nodes being disposed at each of the regions respectively.

25. A computer program comprising: computer code to make a computer generate signals for a graphical display in which a focus can be navigated between spaced,  
25 functional display regions such that they are individually selected when the focus is moved thereto execute procedure to configure a plurality of spaced nodes so that the focus makes a step movement from one node to another thereof in response to user actuation, the nodes being arranged in a mesh at the intersections of a first set of spaced lines extending a first predetermined direction and a second set of spaced  
30 lines extending in a predetermined second transverse direction, the functional

regions being irregularly disposed in the display and at least one of the nodes being disposed at each of the regions respectively.

26. A computer program according to claim 25 embodied on a computer readable medium.

5 27. A computer program according to claim 25 wherein the computer program has been down-loaded from a server and stored in a store associated with the computer.

28. A method of navigating a focus between irregularly spaced, functional display regions on a display device, the method comprising:

10 supplying an individual directional input;  
moving the focus from a first node to a second node in a predefined discrete step along a direction corresponding to said directional input, the second node being disposed between the irregularly spaced, functional display regions;  
15 supplying another directional input and  
moving the focus to a third node disposed within one of said irregularly spaced, functional display regions so as to enable selection of said region.

29. A method according to claim 28 further comprising arranging the nodes at the intersections of a first set of spaced lines extending a first predetermined direction and a second set of spaced lines extending in a predetermined second transverse  
20 direction.

30. A method according to claim 28 comprising determining whether a node is disposed within one of said irregularly spaced, functional display regions and is also located within a predefined segment and in the absence of such a node, providing the second node at the predefined discrete step along a direction corresponding to  
25 said directional input and moving the focus to said second node.

31. A method according to claim 28 wherein the first node is within one of said irregularly spaced functional display regions.

32. A method according to claim 28, wherein the first node is not within one of said irregularly spaced regions and including previously causing the focus to make a step movement from another node in another of said irregularly spaced functional display regions, to said first node in response to an individual directional input.

5 33. A method of operating a display generating device configured to provide a graphical display in which a focus can be navigated between spaced, functional display regions, said method comprising:

receiving an individual directional input;

10 moving the focus from a first node to a second node in a predefined discrete step along a direction corresponding to said directional input, the second node being disposed between the irregularly spaced, functional display regions;

receiving another directional input and

moving the focus to a third node disposed within one of said irregularly spaced, functional display regions so as to enable selection of said region.

15 34. A method according to claim 33 further comprising arranging the nodes at the intersections of a first set of spaced lines extending a first predetermined direction and a second set of spaced lines extending in a predetermined second transverse direction.

20 35. A method according to claim 33 comprising determining whether a node is disposed within one of said irregularly spaced, functional display regions and is also located within a predefined segment and in the absence of such a node, providing the second node at the predefined discrete step along a direction corresponding to said directional input and moving the focus to said second node.

25 36. A display generating device configured to generate signals for a graphical display in which a focus can be navigated between irregularly spaced, functional display regions on a display device, comprising a first input for supplying an individual directional input, a first controller for moving the focus from a first node to a second node in a predefined discrete step along a direction corresponding to said directional input, the second node being disposed between the irregularly

spaced, functional display regions, a second input for supplying another directional input and a second controller for moving the focus to a third node disposed within one of said irregularly spaced, functional display regions so as to enable selection of said region.

5 37. A device according to claim 36, wherein the first and second controllers are unitary.

38. A device according to claim 36, wherein the first input for supplying the individual directional input comprises a user operable navigation control.

10 39. A device according to claim 36, wherein the second means for supplying another directional input and the user operable navigation control is unitary.

Sub A4 40. A device according to claims 36, wherein the functional display region is associated with a region displayed in the graphical display.

Sub B10 41. A device according to claim 36, wherein said first node is within one of said irregularly spaced functional regions.

15 42. A device according to claim 36 coupled to a display device configured to provide said graphical display.

Sub A5 43. A multimedia network terminal including a device according claim 36.

44. A mobile station including a device according claim 36.

45. A personal computer including a device according claim 36.

Sub B12 20 46. A computer program product comprising a computer readable medium having thereon: a computer program, configured when loaded on a computer, to provide a graphical display in which a focus can be navigated between spaced, functional display regions such that they are individually selected when the focus is moved thereto, to make said computer execute procedure to receive an individual

directional input, to move the focus from a first node to a second node in a predefined discrete step along a direction corresponding to said directional input, the second node being disposed between the irregularly spaced, functional display regions, to receive another directional input and to move the focus to a third node  
5 disposed within one of said irregularly spaced, functional display regions so as to enable selection of said region.

47. A computer program comprising: computer code to make data processing apparatus provide signals for a graphical display in which a focus can be navigated between spaced, functional display regions such that they are individually selected  
10 when the focus is moved thereto execute procedure to receive an individual directional input, to move the focus from a first node to a second node in a predefined discrete step along a direction corresponding to said directional input, the second node being disposed between the irregularly spaced, functional display regions, to receive another directional input and to move the focus to a third node  
15 disposed within one of said irregularly spaced, functional display regions so as to enable selection of said region.

48. A computer program according to claim 47 embodied on a computer readable medium.

49. A computer program according to claim 47 which has been down-loaded from  
20 a server and stored in storage means.

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